IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Patent Application of

James O'Neill et al.

Application No. 10/697,618

Filed: October 29, 2003

For: Method of Forming Thin-Film Electrodes

Group Art Unit: 1795

Examiner: McDonald, Rodney G.

DECLARATION UNDER § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, an undersigned inventor of the above-identified patent application, hereby declare the following.

I am a professional and expert in the field of the above identified patent application, namely, methods of forming thin film electrodes. As such, I am competent to judge the ordinary skill in this art.

For convenience of reference, claim 1 of the above-identified patent application reads as follows.

1. (original) A method of forming a thin-film fuel cell electrode, comprising:

providing a substrate and at least one deposition device;

developing a deposition characteristic profile having at least one porous layer based on pre-determined desired electrode properties; and

forming a film in accordance with said deposition characteristic profile by depositing material from said deposition device while varying a relative position of said substrate in relation to said deposition device with respect to at least a first axis.

One of ordinary skill in the art will appreciate that an electrode may have any of a vast range of desired properties depending on the specific environment and application in which that electrode is to be used. It is impossible to specify in the abstract what those properties might be. However, once the operating environment of an electrode has been specified, one of ordinary skill in the art would readily be able to list "pre-determined desired electrode properties" as claimed.

By way of example, my specification describes the formation of anode and cathode electrodes for use in a fuel cell. With regard to that specific example, my specification states that "[v]arying the pore size, porosity, layer thicknesses, and overall film thickness of the electrodes (910, 920) may significantly improve the performance of the fuel cell (900)." (Appellant's specification, paragraph 0046).

One of skill in the art would appreciate, given the explanation of the specification, how these variables and the corresponding physical characteristics of the electrode effect electrode performance. One of skill in the art would then accordingly appreciate how to adjust these characteristics to produce a desired change in the performance of the electrode.

Therefore, given the benefit of Appellant's specification, one of ordinary skill in the art would understand how to adjust the electrode-forming apparatus to achieve the desired characteristics as a matter of experience with a particular tool set or routine experimentation.

Each tool set for depositing material to form an electrode as in the disclosed and claimed method will require separate adjustment to achieve the desired result. Even two identical tool sets may, because of manufacturing variations or environmental factors due to different locations, require different input to produce approximately the same result. Thus, Appellant's specification does not attempt, unreasonably, to specify how to adjust the parameters of all possible apparatus to achieve desired results. Given the disclosed method, such would be within the skill of one ordinarily skilled in the art.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

DATE: November 12, 2009

David Champion